



SOUTH AUSTRALIA.

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# Annual Report

OF

# The Central Board of Health

FOR THE

Year Ended December 31st, 1933.

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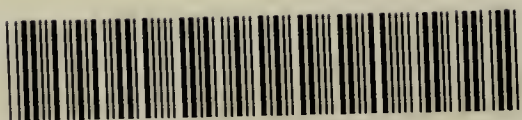
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# THE PUBLIC HEALTH.

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## Annual Report of the Central Board of Health to the Minister of Health (the Hon. George Ritchie).

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Sir,—We have the honour to submit the annual report for the year ending December 31st, 1933, on the work of the Central Board of Health of South Australia. The Board administers The Health Acts, 1898-1932, The Food and Drugs Act, 1908-1926, and The Early Notification of Births Act, 1926.

### PART I.—GENERAL REVIEW OF ACTIVITIES.

*Constitution of the Central Board.*—The Central Board of Health consists of three medical men, one of whom is the Chairman and Permanent Head of the Department, appointed by the Governor, and two representatives of the Local Boards of Health. At the beginning of 1933 the members were Drs. A. R. Southwood (Chairman and Head of the Department), E. Angas Johnson and A. W. Hill (Members appointed by the Governor), Messrs. I. Isaacs (elected by the metropolitan Local Boards) and F. C. Lloyd (elected by the country Local Boards).

On the 29th June, 1933, the death occurred of Dr. A. W. Hill, who had been an esteemed member of the Board for 34 years. During his period of service on the Central Board Dr. Hill had given valuable services to the State. He was Acting Chairman of the Board for a period of 10 months in 1915 when the Chairman of that time, Dr. W. Ramsay Smith, was abroad on war service. Dr. Hill was a very keen sanitarian, and his work in South Australia in the military camps during the war years will be long remembered.

Dr. Lionel B. Bull, Director of the Government Pathological Laboratory at the Adelaide Hospital, was appointed by the Governor to fill the vacancy caused by the death of Dr. Hill. Dr. Bull's extensive knowledge of bacteriological and general pathological work, together with his expert knowledge of veterinary conditions, made him an extremely useful member, and it was with great regret that the Board learned of his resignation. He left Adelaide in January, 1934, to take up an important post in the Commonwealth Service. Professor J. Burton Cleland, Professor of Pathology at the Adelaide University and Honorary Pathologist to the Adelaide Hospital, has been appointed by the Governor to take the place vacated by Dr. Bull.

*Board Meetings.*—The Board met 26 times during the year. In addition to the routine matters associated with the work of the Department, a number of special items were dealt with; these are reviewed in the appropriate portions of the subjoined report.

*Staff of the Department.*—The Board appreciates the energy and zeal with which the members of the Staff have discharged their duties throughout the year. At times the calls have been exceptionally heavy, and it has been necessary for the staff to work at high pressure to fulfil them.

The inspecting staff at present consists of one trained nurse-inspector and two inspectors, compared with a staff of two nurse-inspectors and five inspectors in 1912. Although the present staff might be able to do the most pressing work as a temporary measure without undue risk to the public health, there will still be some departments of health work inadequately provided for or wholly neglected. An increase in the staff is necessary to enable the work to be done in a complete manner.

*Scope of the Board's Work.*—The activities of the Board are of wide range. The Inspectors investigate the work of Local Boards throughout the State. Their reports are dealt with by the Central Board, and the Local Boards concerned are advised as to the requirements.

Some idea of the scope of the work is gained from the following list, which indicates only some visits in 1933, made by Central Board inspectors: slaughterhouses, 119; butchers' shops, 77; bakehouses, 80; hotels, 91; business premises, 868; private premises, 983; septic tanks inspected, 349; plans of septic tanks examined, 239; milk vendors' premises, 315; schools, 67; dealers in poisons, 776; food premises, 683; spirits tested, 599; exhumations and reburials attended, 8.

Special investigations were made by Inspectors of the Central Board into various health matters, including the disposal of spent wine wash at distilleries, possible nuisances arising from bitumen plants, drainage scheme for disposal of waste water at Murray Bridge, disposal of nightsoil at Peterborough, and inspection of camps established by the Unemployment Relief Council.

Inquiries into food and drugs matters also occupied the attention of the staff. Some of the matters investigated were: the use of salicylic acid in beer; the marketing of reconstituted cream; the use of copper salts as a spray in celery-growing; the stamping of chilled eggs; the labelling of pea-nut pastes (the term "butter" not to be applied); and containers used for the transport of fish.

*Co-operation with Local Boards of Health.*—The Central Board arranged in 1931 for visits to be made by representatives of the Board to several of the Local Boards, for the purpose of discussing various matters associated with the work of the Boards. This policy has been continued. All the Local Boards in the metropolitan area have been visited, and a large number of the Local Boards in the country. These conferences are promoting a more active spirit of co-operation between local and central authorities, and greater uniformity of administration is being secured. The fostering of harmonious relations in this way has done much to facilitate the work of the department.

*"Public Health Notes."*—With the view of keeping Local Boards of Health and their officers conversant with developments in public health work, and of stimulating interest in it, the department has since January, 1932, been issuing a quarterly bulletin under the name of "Public Health Notes". The bulletin is distributed to chairmen, members, and secretaries of Local Boards of Health, Officers of Health and Health Inspectors, and also to organisations and individuals interested in health work. This small pamphlet continues to serve a most useful function in disseminating information among the various authorities concerned. It is desired to increase the size of the bulletin when opportunity offers, but even in its present small form, it is an extremely valuable adjunct to health work in the State.

*Conferences of Officers of Health.*—From time to time, conferences of Officers of Health of Local Boards in the metropolitan area have been convened by the chairman of the Central Board. In July, 1933, a conference was held at the Central Board office to discuss the means necessary to control diphtheria. It was feared that the diphtheria epidemic then existing might become serious in its proportions, and it was necessary to be prepared to deal with it.

Dr. W. Christie, Principal Medical Officer of the Education Department, attended the conference by invitation, and explained the work being done in the schools. He stated that children attending school who appeared at all ill, were sent home by the teachers, and advised to consult the family doctor, and where several children in a class had taken the disease, swabbing of the whole class was done, and any carriers detected were treated. The Education Department had conducted the swabbing in these instances, and the laboratory expenses were borne by the Local Boards concerned. The complete co-operation between the Education Department and the Central and Local Boards of Health was very valuable.

In the course of discussion, it was pointed out that many Local Boards carry out and pay for swabbing of patients, suspected sufferers, and home contacts. This was considered a desirable arrangement, and one worthy of adoption by all Boards. The value of immunization by anatoxin was discussed. Local Boards in several country towns had carried out immunization work among children in their areas. The conference members thought that in the metropolitan area, immunization should be left in the hands of the private practitioners.

It was the general opinion of the medical men at the conference that the services of a capable trained nurse-inspector were necessary for infectious diseases work in Local Board areas, and that Local Boards not provided with such expert assistance could hardly do the work in a proper manner.

*Maternity and Child Welfare Work.*—Although active participation in this work is not one of the functions of this department, the valuable work done by the Mothers' and Babies' Health Association is viewed with great interest. This department co-operates with the association in that it forwards daily the lists transmitted to it from the various Local Boards in compliance with "The Early Notification of Births Act". Before this Act came into operation, the association depended upon the registrations for information of births. In view of the length of time (six weeks) which is permitted for the registration of a birth, the information was often received too late for the Baby Welfare Nurse to be of assistance. The danger-time for baby is his first month. The past few years have shown a marked decrease in the infant death rate, and to the Early Notification of Births Act must be attributed some share of the credit for the satisfactory position. In many countries, a similar Act is in operation, and is proving an important factor in the preservation of infant life.

The secretary of the Mothers' and Babies' Health Association (Miss K. Hilfers) contributed a most interesting article to "Public Health Notes" in January, 1933, explaining the work of the association in a very illuminating manner. The low infant mortality rate in South Australia—one of the lowest in the world in recent years—can in part be attributed to the work of the association.

In connection with the work of the Mothers' and Babies' Health Association, a railway carriage has been equipped to serve as a travelling clinic for baby welfare work in the outlying country districts. This is a valuable aid to the work of the Association in advising mothers on infant management. A nurse specially trained in the work travels with the train and conducts the clinics in these smaller country centres, staying a day or two at each place and visiting it again two or three times a year.

*Venereal Diseases.*—Venereal diseases work is also not a direct function of this department. The Venereal Diseases Act of 1920 has not yet been proclaimed, and in South Australia venereal diseases are not notifiable. In other States of the Commonwealth the notification of these diseases is a legal requirement. In the control of venereal diseases compulsory notification is probably of less value than the ample provision of treatment facilities for sufferers, and the instruction of the general public in the nature and dangers of venereal infection. As Sir Arthur Newsholme has put it, "older efforts to control venereal diseases by police methods alone have largely failed and are now replaced or supplemented by treatment to curtail and terminate infection, and by general educational measures."

*Legislation.*—There has been no amendment of the Health Act during the year under review. The Health Act Amendment Act, 1932, among other things, gave the Central Board power to introduce regulations concerning infectious diseases, and draft regulations are under consideration by the Board.

The regulations approved by Parliament under "The Food and Drugs Act, 1908" in 1932 have been in force during the year and are proving satisfactory.

The Local Government Bill has some application to health matters. The Assistant Parliamentary Draftsman (Mr. J. P. Cartledge) was engaged in the work of drafting this Bill for an Act to consolidate and amend certain Acts relating to Municipal Corporations and District Councils and to amend various other Acts. In view of various matters relating to public health coming within the province of not only The Health Act and The Food and Drugs Act but also of the Acts which were being consolidated, Mr. Cartledge attended a meeting of the Central Board of Health. He explained the proposed changes in the

legislation, and discussed the different aspects with the members of the Board. The Board appreciated Mr. Cartledge's address, and thanked him for attending. The Chairman and Secretary of the Board later conferred with Mr. Cartledge on this and cognate matters and submitted a summarised report of the Conference to the Board, which, after consideration, adopted it.

*Federal Health Council.*—The Sixth Session of the Federal Health Council was held at Canberra in February, 1933. The Council consists of the Commonwealth Director-General of Health, two other representatives of the Commonwealth Health Department, and the Heads of the Health Departments of the six States. It usually meets annually. The Chairman of the Central Board attended the Sixth Session as representative for South Australia.

*Public Health Films.*—Through the courtesy of the Commonwealth Director-General of Health (Dr. J. H. L. Cumpston) a number of moving picture films on health subjects were loaned to the Central Board by the Commonwealth Government. The films were shown by the Junior Red Cross Society during the week of its exhibition, which was well attended. Subsequently they were shown by the Local Board for Port Adelaide, where 700 people saw them, and by the Local Board for Unley, where about 900 attended. The films secured the interest of the audiences, and were regarded as of great value as educational propaganda. The pictures illustrating the preparation of diphtheria anti-toxin, and the methods of dealing with epidemics, were especially useful.

PART II.—VITAL STATISTICS.

*Population of the State.*—The figures issued by the Government Statist (Mr. W. L. Johnston) in his Bulletin No. 1 of 1934, show that, although the population continues to increase, the rate of increase has in the past three years been much less than in the years 1910-1930. In 1933 the natural increase—the excess of births over deaths—was 3,996. The loss by migration (for the nine months to 30th September 1933) was 887. The following table sets forth the position with regard to the population of the State :—

Year.	Males.	Females.	Total.
1900 .....	180,349	176,901	357,250
1905 .....	181,467	181,154	362,621
1910 .....	206,557	200,311	406,868
1915 .....	220,967	225,018	445,985
1920 .....	245,300	245,706	491,006
1925 .....	276,266	270,792	547,058
1930 .....	288,626	285,873	574,499
1931 .....	289,405	287,708	577,113
1932 .....	290,262	289,067	579,329
1933 .....	291,238	290,434	581,672

*Births and Deaths.*—The following return, also issued by the Government Statist, shows the number of births and deaths, and the rate per 1,000 of mean population, and the number of infantile deaths (under the age of one year) and the rate per 1,000 births.

Period.	Births.		Deaths.			
	No.	Rate.	Total.		Infants.	
			No.	Rate.	No.	Rate.
Mean—						
1920-24 .....	11,857	23·43	4,901	9·68	693	58·45
1925-29 .....	11,301	20·16	5,034	8·98	526	46·54
Year—						
1930.....	9,984	17·42	4,851	8·46	482	48·28
1931.....	9,079	15·77	4,888	8·49	331	36·46
1932.....	8,521	14·74	4,957	8·58	312	36·62
1933.....	8,900	15·32	4,904	8·44	282	31·69

The general and decided fall in the death rate in the State during the last eight years has been maintained, and the rate for 1933 is the lowest on record.

*Low Infant Mortality Rate.*—The infant mortality rate of 31·69 for 1933 is the lowest yet recorded for any State of the Commonwealth, and is only 0·47 higher than the world record of 31·22 for New Zealand in 1932. The chief causes of the deaths of infants have been—Premature birth, 103 ; malformations, 32 ; injury at birth, 19 ; congenital debility, 20 ; other diseases of infancy, 19 ; diarrhoea and enteritis, 10 ; broncho-pneumonia, 22 ; pneumonia, 8 ; and whooping cough, 8.

*Causes of Deaths.*—The principal causes of deaths and the rates per 10,000 of mean population are shown in the subjoined table, extracted from Bulletin No. 1, of 1934, issued by the Government Statist :—

Disease.	Persons.		Rates.	
	1933.	1932.	1933.	1932.
Diseases of the heart .....	806	857	13·87	14·83
Cancer and other malignant tumors .....	678	654	11·67	11·31
Tuberculosis (all forms) .....	302	275	5·20	4·76
Cerebral haemorrhage, softening, &c. ....	442	443	7·61	7·66
Pneumonia, Lobar-, Broncho-, &c. ....	325	331	5·59	5·73
Bronchitis (all forms) .....	69	64	1·19	1·11
Other diseases of resp. system .....	102	102	1·76	1·76
Nephritis—Acute and chronic .....	290	254	4·99	4·39
Diabetes mellitus .....	115	113	1·98	1·95
Puerperal diseases .....	48	44	·83	·76
Congen. debility, malformations. &c. ....	209	209	3·60	3·62
Senile debility .....	319	311	5·49	5·38
Suicides .....	60	51	1·03	·88
Violent deaths (ex suicides).....	221	272	3·80	4·71
Diarrhoea and enteritis .....	34	68	·59	1·18
Whooping cough .....	11	4	·19	·07
Diphtheria and croup .....	19	11	·33	·19
Influenza .....	35	12	·60	·21
Typhoid fever .....	3	13	·05	·22
Appendicitis and typhlitis .....	33	36	·57	·62
Hernia and intestinal obstruction .....	43	68	·74	1·18
Cirrhosis of liver .....	20	17	·34	·29
Tetanus.....	14	17	·24	·29
All other .....	706	731	12·15	12·65
Total .....	4,904	4,957	84·41	85·75

*Infectious Diseases.*—A widespread epidemic of measles occurred in 1933, but it was not of a serious type and the death rate was low. In Part V. of this report the incidence and special features of infectious diseases are reviewed.

*Deaths by Violence.*—Although most newspaper-readers probably have the idea that deaths by violence, and especially from road accidents, are on the increase, the official figures show that since 1930 there has been a steady fall in the number of deaths by violence. The Government Statist’s figures are :—

	1920.	1925.	1930.	1931.	1932.	1933.
Suicide .....	31	59	65	71	51	60
Homicide .....	12	17	12	10	10	13
Accidental burns .....	19	18	16	12	19	8
Accidental mechanical suffocation .....	—	3	—	—	3	7
Accidental drowning.....	49	44	46	23	52	43
Accidental fall .....	51	55	44	60	39	33
Other causes .....	121	141	191	116	88	44
Total deaths by violence .....	283	337	374	292	262	208

The greater incidence of suicide among males compared with females appears to be the universal experience. In South Australia numbers for the years quoted were :—

Suicides.	1920.	1925.	1930.	1931.	1932.	1933.
Males .....	27	45	55	59	38	48
Females .....	4	14	10	12	13	12

*Effect of Economic Depression on Health Conditions.*—It might be thought that with the continued financial stress the health of the people would suffer, but in this State, as in many other parts of the world, the statistics relating to mortality and morbidity indicate no appreciable effect. For several years, of course, there has been a gradual and steady improvement in general hygienic conditions, and people are following a more healthy mode of living. The value of fresh air and of adequate outdoor exercise has been better appreciated. It is also realised that unemployment, for instance, although leading to possible physical and mental ill-effects, has provided very many people with greater opportunities for leisure and outdoor recreation. It is, as a matter of fact, very difficult to assess the full results of unemployment and industrial depression. Although no definite effects are revealed from the study of vital statistics, deprivation, hardship, and anxiety must leave their marks. The effects—some good, some ill—are doubtless present, though hard to measure.

PART III.—SANITATION.

Attention to sanitation formed the first step in public health work early in the last century, and although the requirements are now clear cut, the fact remains that proper sanitation is still the basis of health work. Insistence on that point is still imperative. Without proper attention to the various details of sanitation, it is not possible to conduct efficient health work at all. In a general way the sanitary condition of the

State is satisfactory. The expense falling on the people in providing various appliances, such as proper sanitary pans, rubbish receptacles and similar things, is hampering the work to some extent. It must be borne in mind, however, that it is unwise to attempt to save money and at the same time expose ourselves to health risks. Health is wealth.

*The Need for Continued Supervision.*—The people generally are becoming more and more conversant with the principles of hygienic living. It might be thought that, unassisted by frequent reminders and requests, they would be capable of applying those principles. Yet it is the experience of health departments in every country that some system of continued supervision, regular inspection, and frequent exhortation is necessary to maintain healthful conditions of life. In this State the Officers of Local Boards attend to the detail work in their areas, while the Central Board exercises supervision over the whole State.

*Disposal of Sewage.*—In the Metropolitan Area, as in most thickly populated places throughout the world, the water carriage of sewage is provided for. This system is gradually being extended. The establishment of the activated sludge plant at Glenelg, to dispose of sewage from Glenelg and adjacent areas, is a notable development of the past year.

In smaller towns the collection of nightsoil by the double pan system, and its disposal by shallow burial, is the method commonly adopted.

The value of the bacteriolytic or septic tank system in country areas with available water supply is now well-established. The success of the system in this State is largely due to the control exercised by this Board.

In South Australia the Central Board of Health, as a result of experience extending over 30 years, has evolved a definite type of bacteriolytic tank which works automatically in the treatment of the sewage and the disposal of the effluent. A detailed historical and descriptive account of this is contained in the Seventh Edition of "The Bacteriolytic or Septic Tank System in South Australia," published by the Department in 1927.

Plans of all proposed tanks, with the connections thereof, require to be submitted to, and approved by, the Central Board of Health, and an inspection of the installation is made by a trained officer of the Board, and a permit issued by the Board authorising the use of the tank.

Up to the present the Board has dealt with over 16,000 installations, and the individual plans of each of these are preserved in the Central Board of Health Office.

Legislation in 1926 and 1927 gave power to Municipal Councils and District Councils to compulsorily require the installation of tanks in towns or townships. Certain of these authorities have exercised this power, with the result that the various premises are provided with a system that is both satisfactory and without cost for working expenses, as the initial cost is the only charge.

For the most part the tanks are found to be highly efficient, and the troubles that occur are mostly associated with the disposal of the effluent. When the soil of the locality is not of an absorbent nature it is sometimes difficult to dispose of the effluent, but this difficulty can usually be overcome fairly readily.

#### PART IV.—FOOD SUPPLY AND DRUGS.

The Central Board administers The Food and Drugs Acts and co-ordinates the work of Local Boards in this field. In the metropolitan area all the powers of the Local Boards of Health under The Food and Drugs Acts and all the functions of the Local Boards of Health under The Health Acts, so far as concern food supplies, are vested in the Metropolitan County Board, which is composed of representatives from the constituent Local Boards of Health.

*The Advisory Committee under The Food and Drugs Act, 1908.*—The Act provides that this Committee, appointed by the Governor, shall consist of the Chairman of the Central Board of Health, who shall preside, the Professor of Chemistry in the University of Adelaide, the Government Analyst, the Officer of Health for the City of Adelaide, and three other persons conversant with trade requirements. At the beginning of 1933 the members were Dr. A. R. Southwood (Chairman), Professor Killen Macbeth, Mr. W. T. Rowe (Government Analyst), Dr. E. Angas Johnson, Messrs. J. White, J. W. Grasby and F. M. Standish.

Mr. J. W. Grasby, who had been a member of the Committee since its inception died in November 1933. Mr. Grasby's knowledge of trade conditions relating to foodstuffs enabled him to contribute valuable work.

The Committee held three meetings and considered the amendment of certain of the Food and Drugs Regulations, 1932, and parts of those Regulations that were disallowed by Parliament, and also other of the Regulations. The subjects reviewed were margarine, sauces, vinegar, pastry, fruit and fruit products, potable water, raspberry vinegar, fruit squash, declaration of certain drugs, soap, the British Pharmacopoeia, bottled milk, infants' food, preserved eggs, chilled eggs, coffee and chicory essence, lead tetra-ethyl, chocolate, pickles, cream of tartar, and liquid paraffin. In those cases in which the Committee decided that action was necessary, the Chief Secretary was advised accordingly.

*Water Supply.*—During 1933 the Advisory Committee on Water Supplies Examination consisted of the Engineer-in-Chief (Mr. J. H. O. Eaton) as Chairman, the Engineer for Water Supply (Mr. A. J. Green), the Chairman of the Central Board of Health (Dr. A. R. Southwood), Professor J. B. Cleland, and Dr. L. B. Bull. The Committee meets from time to time and advises on the various matters of water supply, especially from the health standpoint.

Arising out of representations made regarding prospectors camping on the banks of streams leading to reservoirs some years ago, certain caretakers of reservoirs and patrollers of watershed areas of the Engineering and Water Supply Department were appointed Inspectors under the Health Acts on the understanding that they exercised their duties as Inspectors only in conserving the purity of the streams and watercourses. The arrangement has proved very satisfactory in every way.

*Vendors of Milk.*—The Central Board of Health continued to provide for licensing of vendors of milk and the registration of their premises in the majority of the Local Board districts outside the metropolitan area. The number licensed for the year ended 30th June, 1933, was 402. In the metropolitan area, the Metropolitan County Board exercises control, licensing 1,404 vendors. Forty-two Local Boards effecting licensing in their districts licensed 231 vendors. The numbers licensed by the Central Board and Local Boards have been considerably reduced by the operation of the Dairy Industry Act which exempts premises

licensed under that Act from the licensing provisions of the Food and Drugs Act and by-laws under Municipal Corporation and District Council Acts. During the year further progress was made in gradually bringing all premises registered into conformity with requirements of structural and sanitary condition with the view of securing the production and sale of milk for human consumption under clean and wholesome conditions.

*Undulant or Abortus Fever.*—Occasionally cases of undulant or abortus fever are occurring in this State and Mr. C. A. Loxton, Chief Inspector of Stock, wrote a valuable article on “Contagious Abortion in Cattle” for publication in “Public Health Notes.” The transmissibility of the disease to human beings is a point to note. In practically every country cases of undulant fever have been fairly common in recent years. In South Australia cases occasionally have occurred, and in December two cases were definitely diagnosed. The patients were dairymen in whose herds contagious abortion had occurred. Diagnosis of the disease in the human being may be confirmed by blood culture or by the agglutination test. Undulant fever in human beings is not a notifiable disease in this State, but its public health aspects are important, and are being watched carefully.

*Meat Supply.*—In the metropolitan area, the Metropolitan Abattoirs conduct the slaughtering and deliver the meat to the retail butchers. The work is carried out in a very efficient manner. In country areas the slaughtering is, for the most part, carried out by individual butchers, each with separate slaughtering premises. Supervision of these premises is carried out by Local Board Inspectors. In an article in “Public Health Notes” of April, 1933, Mr. F. W. Fillmore, General Manager of the Metropolitan Abattoirs, discussed the value of meat inspection. Proper inspection, which is so important a matter in ensuring a healthful meat supply, is difficult to perform under conditions existing in small country centres. Whenever opportunity offers, it would be well if in the larger country towns public slaughtering premises were constructed and all slaughtering for the districts carried out at these premises. Under such arrangements it would be possible to carry out inspection of meat more efficiently, and also to ensure the proper conditions of slaughtering generally. At Mount Gambier the question of the establishment of public abattoirs has been seriously considered, and recent advice indicates that at Renmark the subject is also under consideration.

*Chilled and Preserved Eggs.*—A regulation under the Food and Drugs Act, relating to chilled and preserved eggs, came into force towards the end of the previous year. The regulation requires that all eggs placed in any cold store and all eggs that have been preserved are not to be removed from the store unless they have been individually stamped legibly and durably with the word “Chilled” or “Preserved,” as the case may be, and have been examined by the procedure known as the “candling” process. Further, weekly returns regarding the eggs in cold store are to be furnished to the Central Board of Health. Inquiries and inspections have shown that generally the provisions of the regulation are being complied with.

*Lead Poisoning.*—Inquiries were conducted by an Inspector into the alleged occurrence of lead-poisoning at a battery factory. It was found that the conditions were such that it was possible for poisoning to occur but unlikely if the men working at the premises observed proper hygienic requirements. The lead-poisoning hazard from the manufacture of electric accumulators must be recognised, and such premises, especially the smaller factories, should be kept under medical supervision.

*Control of Sale of Poisons.*—The regulation and restriction and conditions of the sale of poisons is directly controlled by the Central Board throughout the State. An active policy of inspection and inquiry has been maintained in order to ensure that requirements are effectively carried out, 776 visits having been made. The number of persons licensed as dealers in poisons was 809.

## PART V.—PREVENTION AND CONTROL OF INFECTIOUS DISEASES.

Apart from the big epidemic of measles, the largest since 1925, the year has not been marked by heavy incidence of infectious diseases. Influenza notifications showed a distinct rise. Chickenpox, diphtheria, erysipelas and puerperal fever occurred to about the same extent of the previous two years. Typhoid fever, dysentery and poliomyelitis have shown an appreciable fall.

The subjoined table sets out the numbers of cases of infectious diseases reported during 1933, and the deaths that have occurred. The cases and deaths for the preceding two years are also shown in the table.

Infectious Diseases.	Cases Reported.			Deaths.		
	1931.	1932.	1933.	1931.	1932.	1933.
Ankylostomiasis .....	1	—	—	—	—	—
Anthrax .....	1	—	—	1	—	—
Cerebro-Spinal Meningitis .....	6	—	3	3	—	—
Chickenpox .....	950	928	1,062	—	—	—
Diphtheria .....	666	517	877	13	11	17
Dysentery-Amoebic .....	1	—	—	—	1	—
Dysentery-Bacillary .....	25	31	5	14	4	3
Encephalitis Lethargica .....	5	2	2	6	6	4
Erysipelas .....	126	94	130	3	3	3
Endemic Typhus Fever .....	*	4	8	*	1	—
Influenza .....	504	44	804	36	14	30
Malaria .....	1	—	—	—	—	—
Measles .....	193	45	13,469	—	1	13
Mumps .....	*	2,292	454	*	—	1
Paratyphoid Fever .....	8	—	3	—	—	—
Poliomyelitis Anterior Acuta .....	37	18	13	6	2	—
Puerperal Fever .....	71	67	80	11	10	10
Pulmonary Tuberculosis .....	403	342	383	291	238	257
Scarlet Fever .....	477	837	978	2	2	4
Typhoid Fever .....	56	46	13	10	12	1
Whooping Cough .....	495	1,542	1,008	6	4	11

\* Denotes Not Notifiable.

During these three years no cases of the following notifiable infectious diseases have occurred :—Bilharziosis, cholera, favus, filariasis, leprosy, plague, smallpox, trichinosis, typhus fever, yellow fever.

*Leprosy.*—In 1930 one case of suspected leprosy contracted elsewhere was brought under the notice of the Board. The patient is still under observation, and the medical attendant reports the condition to the Board from time to time.

*Measles Epidemic.*—In 1925 14,804 cases of measles were reported with 44 deaths. In 1933, the total number of cases was 13,469, and 13 deaths. The heaviest incidence occurred during the four months, August-November, when 10,719 cases were reported. The infection appears to have been conveyed to this State from the Eastern States through the agency of the Tongan Choir, which, in the course of a tour of the Commonwealth, visited this State early in 1933. The choir arrived at Mount Gambier from Portland, Victoria, on the 11th February, 1933. It then visited Naracoorte on the 14th February, Bordertown on the 15th, Mount Barker on the 16th, Murray Bridge on the 17th, and arrived in Adelaide on the 18th. Two or three members of the choir were ill on arrival in Adelaide, and were removed to hospital. Altogether 10 of their 16 members suffered from the illness. The remaining members of the choir were isolated on the 20th February. Seeing that the disease takes a fortnight to develop, the Tongans apparently acquired the infection before arrival in this State.

From the South-East, Murray Bridge, and Mount Barker district, many cases were reported, and subsequently the metropolitan area became involved.

It has been interesting to follow the progress of the infection in the wake of the Tongan Choir from the South-East to the city, and thence the gradual spread to the other country districts. The epidemic, although extensive, was not accompanied by heavy loss of life, and, after remaining active for six months, the number of cases rapidly fell at the end of the year.

*Whooping Cough.*—The epidemic of 1932 was carried on into 1933. In 1932, 1,542 cases were reported and four deaths ; in 1933, 1,008 cases, and 11 deaths. These cases occurred in the early months of 1933, and in the later months the epidemic abated.

*Typhoid Fever.*—It is satisfactory to note that the number of cases of typhoid reported is the lowest recorded since the disease has been notifiable, only 13 cases having been notified. The highest number of cases reported was in 1899, when there were 1,126.

*Diphtheria.*—Diphtheria, which began to increase so rapidly in April last, reduced in prevalence during the last quarter. The figures for each quarter were :—January-March, 117 cases (3 deaths) ; April-June, 467 cases (7 deaths) ; July-September, 236 cases (5 deaths) ; October-December, 159 cases (2 deaths) ; For the year there were 877 cases reported and 17 deaths. It is now 13 years since this State was visited by a severe epidemic of diphtheria. In 1921, 2,744 cases occurred with 123 deaths. In view of the long interval during which the State had been fortunate enough to be only slightly troubled by diphtheria, it was feared that, when cases began to be notified early in 1933, the epidemic might become a widespread and severe one. Fortunately these fears have proved groundless.

To promote uniformity of action, and to bring the matter prominently before Local Boards the Central Board issued a circular to Local Boards detailing the main requirements. These paragraphs are taken from the circular :—

“ Diphtheria can readily be diagnosed from a swab taken from the throat or nose of the sufferer. Wherever practicable suspected sufferers should have swabs taken and examined. When a person is attacked by diphtheria the other people of the household should have swabs taken also. In many cases the family medical adviser will have these taken, but in instances where he has not done so it is desirable that the Local Board should arrange for one of its officers to swab these household contacts. It is rarely necessary to do wholesale throat swabbing of a school, but where a number of the children in one class develop the disease, it is desirable that the others in the class should be swabbed.”

“ It is well that parents should know that their children may safely and surely be protected against diphtheria by a series of three small injections of anatoxin. This method has been widely and successfully used in England, America, and other countries. At the recent meeting of the Federal Health Council it was recommended that immunization against diphtheria should be carried out in children before they reach the school-going age, at any time after the end of the first year of life.”

“ With modern methods diphtheria can be controlled. The whole-hearted co-operation of parents, family medical adviser, school authorities, and health authorities, is essential—nothing less will achieve success.”

It has been encouraging to note the keenness of many Local Boards to deal promptly with diphtheria when it first makes its appearance in their areas. At Port Pirie, Mount Gambier, Renmark, and Barmera, and several other centres, immunization of young children with anatoxin was undertaken, and there is no doubt that this measure helped considerably to limit the spread of the trouble. Apart from immunization, there is no doubt that the prompt recognition, isolation, and treatment of cases continue to exercise a large influence in limiting the spread of the disease. Swab examination of the noses and throats of home contacts is adopted by many local boards, and is a procedure of very great value.

*Scarlet Fever.*—Scarlet fever has continued to appear, but, as in most other countries during recent years, the disease has been of mild form. Of the 978 cases reported only four deaths occurred.

*Guidance of Local Boards.*—The trained nurse-inspector of the Central Board Staff, in the course of her visits to Local Boards, makes special enquiries into infectious disease control. The value of prompt action is emphasised, and of co-operation between the Local Boards, the Officer of Health, the Central Board, and the teachers at the schools. The duties and responsibilities of Local Boards, the visiting of premises, and the instructions given by the Officer of Health regarding isolation of patients, exclusion of

contacts from schools, necessary precautions to prevent the spread of the disease, and terminal disinfection—these matters are explained to Local Board Officers. Local Boards are advised as to the desirability of having an agreement with a hospital for the reception and treatment of infectious cases.

During the year the nurse-inspector also made inquiries into various special matters :—Supposed typhoid “ carrier ” at Melrose ; diphtheria at Protestant Children’s Home (Morialta), at Brinlkey, and at Jamestown ; scarlet fever at Kersbrook, and at Outer Harbour ; a case of pulmonary tuberculosis at Macclesfield.

*The Value of Prompt Action.*—In all infectious disease work it is important to appreciate the value of prompt recognition of the early cases, the immediate notification to health authorities, and the isolation of the sufferers. There is no question that the general medical practitioner plays a very big part, for it is on his early diagnosis and management of home conditions that so much depends.

PART VI.—PREVENTION AND CONTROL OF TUBERCULOSIS.

It is estimated that each year about one million people in the world die from tuberculosis. In England and Wales it causes over 100 deaths each day ; one person in every 12 dies from it. In Australia the death-rate is only slightly lower—one person in 14 dies from tuberculosis. The figures for South Australia are shown in the subjoined table. Tuberculosis causes three times as many deaths as all other notifiable diseases combined. As a community we are far too complacent. In our own small State, year by year, 300 people—mostly young adults—die from tuberculosis. This loss of valuable lives steadily continues. It is a serious matter.

*Deaths which occurred in South Australia from Pulmonary Tuberculosis, from Tuberculosis (all forms), from all Notifiable Diseases (other than Pulmonary Tuberculosis), and from all Causes during the Years 1922-33 (inc.).*

Year.	Pulmonary Tuberculosis.	Tuberculosis (all Forms).	All Notifiable Diseases (other than Pul. Tub.)	All Causes.
1922 .....	319	377	117	4,608
1923 .....	334	369	172	4,961
1924 .....	336	382	150	4,870
1925 .....	332	380	129	4,979
1926 .....	346	391	118	4,877
1927 .....	335	362	128	5,128
1928 .....	291	341	111	5,147
1929 .....	302	345	86	5,039
1930 .....	256	292	121	4,851
1931 .....	291	332	111	4,888
1932 .....	237	275	66	4,851
1933 .....	260	302	96	4,904

*The Improved Outlook.*—In the statistics showing the death rate from pulmonary tuberculosis in each State for 1932, Queensland figures are best, and South Australia is third on the list. In the following table comparison is made between death rates now and 20 years ago. In all States the fall has been striking. In South Australia the improvement has been greater than in any other State.

	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tasmania.
Death-rate per 100,000 for the year 1932 .....	38·26	44·96	33·99	40·44	48·05	47·79
Average annual death-rate per 100,000 for 5-year period 1908-1912 (inclusive) .....	63·60	83·48	55·39	82·17	73·67	65·63
Average annual death-rate per 100,000 for 5-year period 1928-1932 (inclusive) .....	42·84	50·09	35·68	47·24	56·65	47·24
Percentage fall of death-rate in the 20-year period	32·64	39·99	35·58	42·50	23·10	28·02

During the year 383 cases of pulmonary tuberculosis were notified—257 deaths occurred, giving a death-rate of 44·7 per 100,000 population. These figures are slightly higher than those for 1932 ; but, in common with the experience in most other countries of the world, the general trend of recent years has been towards a decided fall in the incidence of tuberculosis. In spite of this it must be recognised that tuberculosis is one of the most widely distributed of all the diseases, and that it constitutes a big problem in public health work.

*Tuberculosis Scheme for the Metropolitan Area.*—In October, 1932, the subject of tuberculosis was fully reviewed by the Chairman of the Central Board in a special report to the Board, and the proposals to render the work of Local Boards of Health more effective were adopted by this Board.

For the guidance of Local Boards, the Central Board issued instructions outlining the scheme for the metropolitan area. The essential feature is that the Nurse-Inspector of the Local Board should visit patients’ homes regularly at least once a month to report and advise on precautionary measures. It is not proposed to conduct this work in country areas at present, but copies of the Chairman’s report and recommendations were sent to all officers of health for their information. Copies of the new leaflet on “ Pulmonary Tuberculosis ” were circulated as a supplement to “ Public Health Notes.”

The new scheme is not revolutionary, for it embodies the plan followed by many Local Boards for several years. It is designed to ensure more active and uniform effort in attacking tuberculosis. It is a useful forward step in the fight against our greatest enemy.

*Tuberculosis Clinic.*—With the building of the new Tuberculosis Clinic at the Adelaide Hospital, better facilities will be available for dealing with those patients, contacts, and suspects, who cannot afford private treatment. The work of the Nurse-Inspectors of Local Boards will greatly assist the Clinic, for the information concerning the home environment of those attending the Clinic will be extremely valuable in the attempt to check the spread of the disease among home contacts. The proper supervision of the homes of tuberculosis sufferers is a practice of the greatest public health importance.

## PART VII.—LOCAL BOARDS OF HEALTH.

Each Municipal and District Council throughout the State is, by the provisions of The Health Act, constituted a Local Board of Health. During the year several alterations have occurred as a result of the operations of the Local Government (Re-arrangement) Areas Commission. These should lead to greater convenience in working and more efficient administration. In some cases the areas covered by local bodies have been enlarged, and in other cases two or more bodies have been amalgamated. The necessary adjustments regarding appointments of Officers of Health have been made and have been approved by the Central Board.

Each Local Board is the unit for attending to the detail work involved in the administration of The Health Acts and The Food and Drugs Acts. The officers of the Board should comprise :—(1) Secretary, (2) Officer of Health—a medical man to advise the Local Board from the medical point of view, (3) Health Inspector—whose main duties relate to sanitation and the supervision of food and drugs matters, and (4) a Trained Nurse Inspector whose main duties relate to infectious diseases and tuberculosis. Not every Local Board is provided with the services of a trained nurse inspector. The Central Board considers that without such aids the Local Boards cannot do full justice to the work of infectious diseases control. No doubt financial considerations have deterred many boards from engaging a trained nurse inspector, but it is suggested that, especially in the metropolitan area and the larger towns, two or more boards might combine and employ a trained nurse to assist them in the health work of their areas.

*Visits to Local Boards.*—The Central Board has continued to follow its policy of keeping in touch with local boards by arranging conferences between its representatives and various Local Boards. In many instances four or five adjacent Local Boards have been asked to combine in one meeting.

In January, 1933, a meeting was held at Maitland between representatives of the Central Board and the Local Boards for Maitland and Yorke Peninsula. At Yorketown the Central Board representatives met the Local Boards for Edithburgh, Yorketown, and Minlaton, and at Port Wakefield the Local Board for Port Wakefield.

In July, 1933, the Local Board for Willunga was met at that town, and at Victor Harbour the Local Boards for Victor Harbour, Port Elliot, and Encounter Bay, joined in meeting the Central Board representatives.

In September, 1933, the following meetings were held :—At Kapunda, the Local Boards for the Town and District of Kapunda, Eudunda, and Freeling ; at Morgan, the Local Board for Morgan ; at Barmera, the Local Board for Cobdogla ; at Renmark, the Local Boards for Renmark Town, Renmark Irrigation Trust, and Paringa ; at Loxton, the Local Boards for Loxton, and Brown's Well ; at Waikerie, the Local Board for Waikerie.

At Strathalbyn, in November, the Local Boards for the Town and District of Strathalbyn, and the Districts of Bremer, Brinkley, and Macclesfield met together in conference with Central Board representatives.

*Work of Local Boards.*—Inspections made by officers of the Central Board indicate that, for the most part Local Boards attend to their duties in a satisfactory manner. In some instances, however, Local Boards are not sufficiently alive to their powers and responsibilities. Slaughterhouses, milk vendors' premises, bakehouses, and food premises generally need frequent and regular supervision by Local Board Inspectors to ensure proper protection of the public health. The proper disposal of nightsoil and refuse, and the general cleanliness of private premises are also matters that require proper care and attention.

It has been evident that Local Boards are taking a far greater interest in the health work of their areas. The Central Board has endeavored to impress on Local Board members the desirability of each considering himself responsible to some extent for the health conditions of his particular ward or district. With an increased appreciation of this individual responsibility health work will be engaged in with still greater enthusiasm.

## PART VIII.—CONCLUSIONS AND RECOMMENDATIONS.

1. This report provides evidence of the fact that the public health of the State is satisfactory, according to modern standards. The low general death rate, the very low infant death rate, and the low incidence of typhoid fever, and of serious infectious diseases, are all striking points.

2. Several causes contribute to this condition of affairs—

- (a) the climatic and other natural features of the State are health promoting ;
- (b) there are no dangerous endemic diseases, and the quarantine service protects us against the introduction of dangerous diseases from other countries ;
- (c) our people are in the main of Anglo-Saxon origin, we are free from the difficulties incidental to mixed populations ;
- (d) our people are hygienically-minded, they have an innate desire for cleanliness ;
- (e) the medical profession of the State is well trained in the principles of preventive medicine ;
- (f) the local and central health authorities, as well as voluntary organisations, such as the Mothers' and Babies Health Association, and the Red Cross Society, are active and enthusiastic.

3. In spite of the present favourable state of the public health there is still room for great improvement and need for continued effort. There are still many premature deaths and much avoidable illness.

4. The financial stress of recent years has limited new developments in public health work. It has become a matter of "holding on," of attending to the routine tasks. The risk to the public health from excessive stinting of expenditure on the work must not be overlooked.

5. The method of public health administration in this State is based on the English system, and is a sound one. Local authorities attend to the detail work in their areas; the Central Board controls, guides, assists, and supervises. Full co-operation between central and local bodies is essential to success, and this feature has been fostered by this board.

6. Enlargement of the Central Board staff of trained inspectors is necessary to provide greater aid for local boards, and for better supervision of their work.

7. Every Local Board must realise the need of a sufficient and capably trained staff for health work. Regular and thorough inspections are essential to maintain a proper sanitary state of a district. For infectious diseases work in Local Board areas the services of a trained nurse-inspector are invaluable.

8. Many Local Boards should give greater care to the disposal of refuse and nightsoil. The septic tank method for excreta disposal is valuable for unsewered areas and should be encouraged.

9. The conditions of food supply generally are satisfactory. The Metropolitan Abattoirs ensures a sound meat supply for the area it covers. In country towns the provision of public abattoirs and a system of meat inspection should be seriously considered.

10. The importance of adequate safeguards to ensure purity of milk supply must be borne in mind. In thickly populated areas in many countries pasteurization is now required. There is no clear evidence that infected milk causes much illness in this State, although the amount of tuberculosis from this source is hard to determine. Occasional cases of undulant or abortus fever have recently occurred in this State.

11. No large outbreak of dangerous or severe infectious disease has occurred during the year. The large measles epidemic was of mild type.

12. With present methods it is possible to exercise efficient control over diphtheria. When diphtheria has appeared in their areas many Local Boards have been active in taking swabs from persons resident in infected houses, and in conducting immunization campaigns.

13. Tuberculosis is still a big public health problem. Spread of the disease occurs mainly from human sufferers who take insufficient precautions. The close contacts of the home life of sufferers are the main danger, and Local Board nurse-inspectors are of great value in supervising the conditions in the homes.

14. Health departments all over the world are realising the value of public education in health matters. The teaching of hygiene in schools, and propaganda through press and pictures, are means commonly adopted. The quarterly bulletin issued by this department aims to keep the value of health work prominently before the public. Legal compulsion will rarely be required if people are instructed in hygiene and understand the reasons for the various ordinances.

A. R. SOUTHWOOD, Chairman.

E. ANGAS JOHNSON,	} Members.
J. B. CLELAND,	
I. ISAACS,	
F. C. LLOYD,	

S. C. STENNING, Secretary.

Adelaide, March 28th, 1934.